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By- Poe, Charles A.; Bartz, Wayne H.

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This study was designed as an initial exploration of certain relationships of academic achievement, personal needs, and cognitive style. The relationship of the Edwards Personal Preference Schedule (EPPS) need for achievement and actual academic achievement (grade averages) in a sample of college students was explored. Also investigated was the relationship of Rotter's expectancy for control of reinforcement inventory (I-E) to (a) the EPPS need for achievement, and (b) quarter grade averages. The data supported the hypothesized relationship of need for achievement and actual achievement. Contrary to expectations, the data did not support the hypothesized relationship of the expectancy of internal control of reinforcement to either need for achievement or actual achievement. Certain male-female differences in needs related to actual achievement were noted. (Author/IM)

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Co-Author and Presenter: Charles A. Poe, Ph.D.

Title: Senior Counselor
Student Counseling Service
and
Assistant Professor
Department of Psychology

Co-Author: Wayne H. Bartz, Ph.D.
Associate Professor
Department of Psychology

Institution: Iowa State University

Mailing Address: Charles A. Poe
Student Counseling Service
Iowa State University
Ames, Iowa 50010

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Cognitive Style, Personal Needs and Academic Achievement[1]

Charles A. Poe and Wayne A. Bartz

Iowa State University

From the conceptual meanings of certain personal needs and cognitive styles, it would be predicted that these variables are related to academic achievement. Murray conceptualized an extensive array of motivational variables in his theory of personality (1938). Of these motivational, or need, factors the need for achievement would appear most relevant to the prediction of academic achievement. The Edwards Personal Preference Schedule (1959, hereinafter designated EPPS), an inventory constructed to assess 15 personal needs, was derived directly from Murray's theory of personality. Therefore, the EPPS need for achievement, as Murray's original conception of this need, would be expected to be related to academic achievement. Earlier studies (Buros, 1965) of the relationship of the EPPS need for achievement and actual academic achievement have produced inconsistent results, some studies showing a significant relationship and some finding no relationship. Nonetheless, it would be clearly predicted from Murray's conception of the need for achievement that this need would be related to actual achievement.

Certain cognitive styles would be expected to be related to academic achievement. Rotter (1966) argued that a generalized expectancy for internal control of reinforcement, or a belief that the outcomes of one's efforts are largely determined by one's own ability and skill rather than some external factor, is conceptually related to achievement <u>motivation</u>. Thus, in the present

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study, Rotter's expectancy for internal control of reinforcement would be predicted to be related to the measure of achievement motivation, the EPPS need for achievement. Rotter (1966) presented evidence which supported the hypothesized relationship of achievement motivation and expectancy for internal control of reinforcement. It can be inferred from this hypothesized relationship of expectancy for internal control of reinforcement and achievement motivation, that the expectancy for internal control is also related to actual achievement. (In the present study, first-quarter college grade averages.) Therefore, it is predicted that Rotter's expectancy for internal control of reinforcement will be significantly related to the EPPS need for achievement and to grade averages. Rotter's inventory for measuring the expectancy of internal vs. external control of reinforcement will hereinafter be designated as "I-E."

The present study was designed as an initial exploration of certain relationships of academic achievement, personal needs, and cognitive style. First, this study explored the relationship of the EPPS need for achievement and actual academic achievement (grade averages) in a sample of college students. Second, this study investigated the relationship of Rotter's expectancy for control of reinforcement (I-E) to (a) the EPPS need for achievement and (b) quarter grade averages.

Method

The EPPS and the I-E inventory were administered to 131 college freshmen (male = 69, Female = 62) enrolled in an introductory psychology course during the fall quarter, 1966. Total points accumulated in the psychology course and first quarter grade average were recorded for each subject. Correlations were computed between these measures of academic achievement, the EPPS personal needs and Rotter's expectancy for internal vs. external control of reinforcement.

Results

The results of the correlational analyses are presented in Table 1 (total sample), Table 2 (males only) and Table 3 (females only).

The EPPS need for achievement was significantly related to actual achievement, i.e., total points in course and quarter grade average (first column in Tables 1, 2, and 3). The need for achievement appeared to be more highly related to actual achievement than was any other variable.

Rotter's expectancy for internal vs. external control of reinforcement appeared to be unrelated to the EPPS need for achievement and unrelated to actual achievement (final row and final column in Tables 1, 2, and 3). A limited relationship with need for succorance was suggested.

By comparing identical row and column locations in Tables 2 and 3, male and female differences may be noted. The columns for the needs of nurture, change, and abasement should be particularly noted.

Discussion

What do the findings suggest for the practicing counselor (who may query himself about an EPPS profile, a grade average, or a Rotter I-E score in a client's folder)?

First, the significant relationship of need for achievement and grade averages clearly suggests that the need for achievement is not unrelated to academic achievement. In other words, given need achievement or grade averages one may - to a limited extent - predict the other. Also, given over - or under - achievement, one could explore the hypothesis that a client is corresponding "over" or "under" in need for achievement. Finally, since the need for achievement "goes along with" actual achievement, the counselor may well be sensitive to any discrepancies that occur between the levels of

need for achievement and actual achievement, e.g. high need for achievement but low actual achievement. Such a discrepancy may indicate some difficulties the client may profitably explore.

Second, the design of the present study dictates that the results be viewed tentatively. Tentativeness is necessary because the effects of ability upon academic achievement were not controlled. That is, the need for achievement might be more, or less, related to actual achievement were a group of persons of equal ability assessed.

Third, the present study suggests that academic performance is complexly determined. It appears reasonable to assume that ability and motivation, and perhaps other factors, combine in some complex way to produce achievement behavior. Ability and need achievement may operate independently in influencing actual achievement. In such an instance the need for achievement would add significantly to ability in predicting grades (as in a multiple correlational analysis). Thus, in the counselor's prediction of a student's grade it would be well to know both his ability and his need to achieve. In another example, need for achievement might interact with ability in producing grades, i.e. high need for achievement would influence actual achievement more in highly able students than in lowly able students. Such a relationship might exist in certain situations which the counselor is likely to recognize as involving "problems," e.g. the lowly motivated but highly able student. (This example would be seen as an exception of the general relationship, that is, where discrepancy of ability and need for achievement occur.) In this last example of possible interaction effects of ability and need for achievement the counselor can more effectively predict if he has both ability and need for achievement information about the client.

Turning to the Rotter I-E inventory, the present data do not support the hypothesized relationship of the expectancy for internal control of reinforcement and achievement motivation (EPPS need for achievement) or actual achievement (quarter average). These results are surprising in light of Rotter's theorizing and some previous research. The present data questions this previous thinking and research, at least in their straight-forward forms. Though quite speculative, some complex factors - such as moderating variables - may be operating which would obscure linear relationships underlying correlational analysis. Nonetheless, it is mandatory that further investigation be conducted before Rotter's inventory could be utilized to predict academic achievement in groups, and most certainly, with individual clients.

Certain observations, incidental to the major objectives of this study, can be noted. Academic achievement may have been influenced differentially in men and women (Tables 2 and 3, columns "NUR" and "CHG"). In men the need for nurturance was negatively related to academic achievement while in women the relationship was positive. In women the need for change was negatively related to academic achievement, while in men the relationship was positive.

A final suggested differential effect in men and women was noted. For men, ascribing to an internal expectancy was negatively related to need for abasement while in women the relationship was positive.

The differential effects in men and women must be viewed highly tentatively, perhaps being in part due to the effects of the institution, a science and technology university. For the counselor, the differential effects are reminders that, not only in general is academic achievement complexly determined, but also this complex pattern of determination probably varies across the sexes and, perhaps, across other groupings as well.

Summary

The data supported the hypothesized relationship of need for achievement and actual achievement. Contrary to expectations, the data of the present study did not support the hypothesized relationship of the expectancy of internal control of reinforcement to need for achievement or actual achievement. Certain male-female differences in needs related to actual achievement were noted.

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Correlations of Cognitive Styles, Personal Needs, and Academic Achievement

Table 1
(total sample - 131)

	EPPS Needs[a]															
	ach	def	ord	exh	aut	aff	int	suc	dom	aba	NUR nur	CHG chg	end	het	agg	I-E
Quarter grade average	.33***	-.05	.04	-.09	-.04	-.17	.08	-.06	.06	.05	-.01	-.03	.11	-.17	-.05	.06
Points in course	.38***	-.06	-.10	-.10	.10	-.18	.17	-.10	.12	-.01	-.04	-.05	.06	-.22	.05	.00
I-E inventory	-.07	.02	-.12	.05	.05	.05	-.07	.25	-.04	-.07	.11	.01	-.19	-.01	.03	

Table 2
(Male = 69)

	EPPS Needs[a]															
	ach	def	ord	exh	aut	aff	int	suc	dom	aba	NUR nur	CHG chg	end	het	agg	I-E
Quarter grade average	.35***	-.16	.16	-.11	.03	-.28	.11	-.03	-.07	.07	-.23**	.08	.22	-.18	.00	.01
Points in Course	.39***	-.12	-.15	.01	.22	-.29	.18	-.02	-.01	-.07	-.23*	.17*	.08	-.21	.08	-.13
I-E inventory	-.09	.00	-.26	.20	.07	.09	-.14	.25	.03	-.24*	.07	.10	-.30	.14	.12	

Table 3
(Female = 62)

	EPPS Needs[a]															
	ach	def	ord	exh	aut	aff	int	suc	dom	aba	NUR nur	CHG chg	end	het	agg	I-E
Quarter grade average	.32**	.05	-.06	-.07	-.10	-.05	.07	-.09	.15	.02	.23**	-.12	-.04	-.20	-.11	.12
Points in course	.36***	.00	-.05	-.26	-.00	-.05	.20	-.16	.20	.06	.17*	-.23*	-.00	-.30	-.01	.13
I-E inventory	-.03	.02	.03	-.15	.02	-.02	.01	.25	-.09	.16*	.14	-.10	-.02	-.15	-.07	

*** $p < .005$ (Due to the ipsative nature of the EPPS only the r with need for achievement was tested for difference from zero.)

** Suggested male-female difference at $p. < .01$.

* Suggested male-female difference at $p. < .05$.

a The full title of the 15 needs whose abbreviations are used above are: (ach) achievement, (def) deference, (ord) order, (exh) exhibition, (aut) autonomy, (aff) affiliation, (int) intraception, (suc) succorance, (dom) dominance, (aba) abasement, (nur) nurturance, (chg) change, (end) endurance, (het) hetrosexuality, and (agg) aggression.